

REMARKS

Claims 1-5 are pending. Claims 1 and 3 have been amended. Reconsideration and allowance of the present application based on the following remarks are respectfully requested.

In the Abstract

The Abstract was objected to. Applicants have amended the Abstract to correct the informality identified by the Examiner. A clean copy of the amended Abstract is included on a separate sheet as required. Accordingly, Applicants respectfully request withdrawal of this objection.

Claim Rejections Under 35 U.S.C. § 112

1. Claims 1-5 were rejected under 35 U.S.C. § 112, first paragraph. Applicants respectfully submit that the details the Office Action alleges are missing are routine within the art, such that no undue experimentation would be necessary.

Referring back to the April 4, 2006 Office Action, the Examiner noted that several elements were inadequately explained in the specification. The Examiner first noted that the specification does not disclose the function of the DMI and sensor synchronizer. Applicants have amended claims 1 and 3 to remove and reference to the DMI and sensor synchronizer.

The Examiner further questioned how the GPS/INS integrator is being employed to provide error correction. Schwarz ("VIASAT – A Mobile Highway Survey System of High Accuracy," IEE Vehicle Navigation & Information Systems Conference, 1993), enclosed herewith, discloses that INS systems gradually developed position errors, and that frequent updating is needed to correct those errors. (Pg. 477, Col. 2, ¶ 3). Schwarz then discloses that GPS may be used to correct these errors. (Pg. 477, Col. 2, ¶ 4). Accordingly, Schwarz demonstrates that integrating GPS data to perform INS error correction is routine in the art. See also El-Sheimy ("The Development of VISAT – A Mobile Survey System For GIS Applications," 1996) (discussing the use of GPS to correct INS errors at pp. 16-17).

The Examiner further questioned how the camera interior/exterior orientation can be obtained by self-calibration. Schwarz discloses that "calibration is... an essential step before using the CCD camera in photogrammetric applications." (Pg. 478, Col. 1, ¶ 3). El-Shiemy also discloses a "self-calibration" process at pages 75-80. Accordingly Schwarz and El-Shiemy demonstrate that camera self-calibration was routine in the art.

Finally, the Examiner stated that the specification is silent as to how the 3-dimensional coordinates of a road can be determined by the target position extractor based upon the data from the GPS/INS integrator and the two cameras. Schwarz states that "the image coordinates [i.e., from the camera] will be transformed from the 2-D image coordinate system to the 3-D ground coordinate system using the INS attitude and the GPS positions." (Pg. 478, Col. 2, ¶ 1). El-Shiemy discloses, in some detail, the georeferencing of GPS, INS and camera data to derive positional information. Accordingly Schwarz and El-Shiemy demonstrate that the determination of 3-D coordinates from GPS, INS and camera data was routine in the art.

As can be readily seen from the above description, the details the Office Action alleges are missing are routine within the art, such that no undue experimentation would be necessary. Accordingly, Applicants respectfully request reconsideration and withdrawal of these rejections.

2. Claims 1-5 were rejected under 35 U.S.C. § 112, second paragraph. Applicants respectfully submit that the details the Office Action alleges are missing are routine within the art, such that no undue experimentation would be necessary.

The Examiner made a number of points in the April 4, 2006, office action, each of which will be addressed in turn. First, the Examiner stated that there is no recitation in the body of these claims as to how the two CCD cameras are being employed in installing the RFID tag. Applicants respectfully submit that this concern has been addressed above. The two CCD cameras provide additional position information.

The Examiner stated that it is unclear what is being detected or measured by the INS. Applicant respectfully submits that the operation of inertial navigation systems are well known in the art, as demonstrated by Schwarz at pg. 477, col. 2, ¶ 3, as well as El-Shiemy at page 17 (as an "inertial measuring unit").

The Examiner stated that the "post-processing" stage was unclear. Applicants submit that the context of the claim makes clear that the INS/GPS integration may either be performed in real time or in a post-processing stage.

The Examiner stated that it was unclear whether the target position extractor uses the data from the two CCD cameras. Applicants have amended claim 1 to require that the target position extractor use data from the CCD cameras and the INS/GPS integrator.

Applicant has amended claim 1 to replace "such as" with "including," and to place a "the" in front of "3-dimensional coordinates and road information." Applicant has claim 3 to replace "the position information" with "the 3-dimensional coordinates of the road."

All concerns having been addressed, Applicants therefore respectfully request the reconsideration and withdrawal of the rejections of claims 1-5.

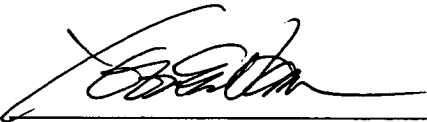
Conclusion

Therefore, all objections and rejections having been addressed, it is respectfully submitted that the present application is in a condition for allowance and a Notice to that effect is earnestly solicited.

Should any issues remain unresolved, the Examiner is encouraged to contact the undersigned attorney for Applicants at the telephone number indicated below in order to expeditiously resolve any remaining issues.

Respectfully submitted,

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